

## **Editorial**



https://doi.org/10.11646/zootaxa.4717.1.3 http://zoobank.org/urn:lsid:zoobank.org:pub:4B418764-D6E1-4A8E-9C62-0C190431F105

## Introducing the second volume on the ontogeny and morphological diversity in immature mites

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Immature mites are much less known than their adults, although they may also provide a diversity of characters and other information useful for understanding mite classification and phylogeny (Zhang et al. 2018). A recent survey of taxonomic papers published on mites from 2015 to 2017 showed that only 10% of these contained descriptions of immature stages in addition to adults and as few as 3% included data on all life stages (Liu & Zhang 2018). To address this imbalance, this series of special volumes is designed to promote studies on the ontogeny and morphological diversity in immature mites, with a special focus on the comparative morphology of all life stages. The first volume was a success and published last year (Zhang et al. 2018). It received strong support from numerous colleagues who shared the interest in ontogeny and immature mites (Bayartogtokh & Ermilov 2018; Castro et al. 2018; Gerdeman et al. 2018; Li et al. 2018; Liu & Zhang 2018; Ma et al. 2018; A. Seniczak & S. Seniczak 2018a; S. Seniczak & A. Seniczak 2018; Xu et al. 2018; Yi et al. 2018). This second volume matched the first volume in size (just a few pages longer), including 5 papers on Oribatida (Bayartogtokh & Ermilov 2019a,b; Ermilov et al. 2019; S. Seniczak et al. 2019a,b), three papers on Trombidiformes (Costa et al. 2019; Seeman 2019; Xu et al. 2019) and one paper on Mesostigmata (Moraza 2019). It is a delight to see the return of many authors form the first volume as well as some new authors. The third volume is in preparation, to accommodate some papers that missed the deadline for this volume and some new submissions. It is encouraging to see to an increasing interest in mite ontogeny here and elsewhere: e.g. the largest mite journal "Systematic and Applied Acarology" published over 100 taxonomic papers in 2018 and 15% of these provided descriptions of all life stages, including 10 papers by the Seniczak team alone (A. Seniczak & S. Seniczak 2018b; A. Seniczak A. et al. 2018a-d; S. Seniczak 2018 et al. 2018a-e).

I thank all the authors of papers in this volume for contributing to this volume and all reviewers who provided comments on these papers. I also thank my co-editors Dr Marut Fuangarworn (Thailand), Dr Owen Seeman (Australia), and Dr Sergei Mironov (Russia) for editing and accepting papers published in this special volume.

## References

Bayartogtokh, B. & Ermilov, S.G. (2018) Ontogeny of morphological traits in *Teleioliodes ghanensis* Wallwork, 1963, with remarks on juveniles of Neoliodidae (Acari: Oribatida). *Zootaxa*, 4540 (1), 40–53. https://doi.org/10.11646/zootaxa.4540.1.6

Bayartogtokh, B. & Ermilov, S.G. (2019a) Ontogeny of morphological traits in *Oribatella palustris* Hammer, 1962, with remarks on juveniles of Oribatellidae (Acari: Oribatella). *Zootaxa*, 4717 (1), 85–103. https://doi.org/10.11646/zootaxa.4717.1.8

Bayartogtokh, B. & Ermilov, S.G. (2019b) Ontogenetic morphology of *Tutorozetes incisirostris* Ermilov, 2016, with remarks on juveniles of Punctoribatidae (Acari: Oribatida). *Zootaxa*, 4717 (1), 65–84. https://doi.org/10.11646/zootaxa.4717.1.7

Castro, E.B, Beard, J.J., Ochoa, R., Bauchan, G.R. & Feres, R.J.F. (2018) Two new species of *Tenuipalpus* sensu stricto (Acari: Tenuipalpidae) from Brazil, with a discussion on the ontogeny of leg setae. *Zootaxa*, 4540 (1), 178–210. https://doi.org/10.11646/zootaxa.4540.1.12

Costa, S.G.S., Klompen, H., Bernardi, L.F.O., Gonçalves, L.C., Ribeiro, D.B. & Pepato, A.R. (2019) Multi-instar descriptions of cave dwelling Erythraeidae (Trombidiformes: Parasitengona) employing an integrative approach. *Zootaxa*, 4717 (1), 137–184. https://doi.org/10.11646/zootaxa.4717.1.10

Ermilov, S.G., Makarova, O.L. & Bizin, M.S. (2019) Morphological development, distribution and ecology of the arctic oribatid mite *Hermannia scabra* (Acari: Oribatida: Hermanniidae) and synonymy of *Hermannia gigantea*. *Zootaxa*, 4717 (1), 104–136. https://doi.org/10.11646/zootaxa.4717.1.9

Gerdeman, B.S., Garcia, R.C., Herczak, A. & Klompen, H. (2018) *Philippinozercon*, a new genus of Heterozerconidae (Parasitiformes: Mesostigmata), with description of all active instars. *Zootaxa*, 4540 (1), 7–22.

- https://doi.org/10.11646/zootaxa.4540.1.4
- Li, J., Yi, T.-C., Guo, J.J. & Jin, D.-C. (2018) Ontogenetic development and redescription of *Eotetranychus kankitus* (Acariformes: Tetranychidae). *Zootaxa*, 4540 (1), 132–157. https://doi.org/10.11646/zootaxa.4540.1.10
- Liu, J.-F. & Zhang Z.-Q. (2018) A survey of descriptions of immature instars of mites during the last three years. *Zootaxa*, 4540 (1), 211–224. https://doi.org/10.11646/zootaxa.4540.1.13
- Ma, M., Fan, Q.-H. & Zhang, Z.-Q. (2018) Ontogenetic changes in the morphology of *Eharius chergui* (Acari: Phytoseiidae). *Zootaxa*, 4540 (1), 23–39. https://doi.org/10.11646/zootaxa.4540.1.5
- Moraza, M.L. (2019) New data on the genus *Uroseius* Berlese (Acari: Mesostigmata: Uropodina: Trachytidae) with a redescription of *U. sor-rentinus* (Lombardini, 1952). *Zootaxa*, 4717 (1), 7–29. https://doi.org/10.11646/zootaxa.4717.1.4
- Seeman, O.D. (2019) New species of *Eutarsopolipus* (Trombidiformes: Podapolipidae) from the pterostichine genera *Castelnaudia* and *Trichosternus* (Coleoptera: Carabidae) in Australia. *Zootaxa*, 4717 (1), 206–230. https://doi.org/10.11646/zootaxa.4717.1.12
- Seniczak, A. & Seniczak, S. (2018a) Morphological ontogeny of Achipteria punctata (Acari: Oribatida: Achipteriidae). Zootaxa, 4540 (1), 54–72. https://doi.org/10.11646/zootaxa.4540.1.7
- Seniczak, A. & Seniczak, S. (2018b) Morphological ontogeny of *Melanozetes stagnatilis* (Acari, Oribatida, Melanozetidae). *Systematic and Applied Acarology*, 23 (4), 652–664. https://doi.org/10.11158/saa.23.4.7
- Seniczak, A., Seniczak, S., Graczyk, R. & Pacek, S. (2018a) Morphological ontogeny of *Hafenrefferia gilvipes* (Acari: Oribatida: Tenuialidae), with comments on *Hafenrefferia* Oudemans. *Systematic and Applied Acarology*, 23 (7), 1265–1277. https://doi.org/10.11158/saa.23.7.5
- Seniczak, A., Seniczak, S., Kaczmarek, S. & Bolger, T. (2018b) Morphological ontogeny of *Chamobates pusillus* (Acari, Oribatida, Chamobatidae), with comments on some species of *Chamobates* Hull. *Systematic and Applied Acarology*, 23 (2), 339–352. https://doi.org/10.11158/saa.23.2.9
- Seniczak, A., Seniczak, S., Kaczmarek, S., Haq, M.A. & Bolger, T. (2018c) Morphological ontogeny of Heptacarus hirsutus (Acari, Oribatida, Lohmanniidae), with comments on Heptacarus Piffl. Systematic and Applied Acarology, 23 (5), 911–324. https://doi.org/10.11158/saa.23.5.9
- Seniczak, A., Seniczak, S., Kaczmarek, S. & Marquardt, T. (2018d) Morphological ontogeny of *Protoribates dentatus* (Acari, Oribatida, Haplozetidae). *Systematic and Applied Acarology*, 23 (4), 613–627. https://doi.org/10.11158/saa.23.4.4
- Seniczak, S., Seniczak, A. & Kaczmarek, S. (2018a) Morphological ontogeny of *Platyliodes scaliger* (Acari, Oribatida, Neoliodidae), with comments on *Platyliodes* Berlese. *Systematic and Applied Acarology*, 23 (1), 25–41. https://doi.org/10.11158/saa.23.1.3
- Seniczak, S., Seniczak, A. & Kaczmarek, S. (2018b) Morphological ontogeny of *Peloribates longipilosus* (Acari, Oribatida, Haplozetidae). Systematic and Applied Acarology, 23 (3), 521–531. https://doi.org/10.11158/saa.23.3.10
- Seniczak, S., Seniczak, A. & Kaczmarek, S. (2018c) Morphological ontogeny of *Ceratozetes shaldybinae* (Acari, Oribatida, Ceratozetidae). *Systematic and Applied Acarology*, 23 (3), 581–592. https://doi.org/10.11158/saa.23.3.13
- Seniczak, S., Seniczak, A., Kaczmarek, S. & Marquardt, T. (2018d) Morphological ontogeny of *Diapterobates altaicus* (Acari: Oribatida: Ceratozetidae), with comments on Diapterobates Grandjean. *Systematic and Applied Acarology*, 23 (8), 1656–1671. https://doi.org/10.11158/saa.23.8.14
- Seniczak, S., Seniczak, A., Kaczmarek, S. & Marquardt, T. (2018e) Morphological ontogeny of Minunthozetes pseudofusiger (Acari, Oribatida, Punctoribatidae) and comments on Minunthozetes Hull. Systematic and Applied Acarology, 23 (6), 1155–1168. https://doi.org/10.11158/saa.23.6.11
- Seniczak, S. & Seniczak, A. (2018) Morphological ontogeny of *Minunthozetes semirufus* (Acari: Oribatida: Punctoribatidae). *Zootaxa*, 4540 (1), 73–92. https://doi.org/10.11646/zootaxa.4540.1.8
- Seniczak, S., Seniczak, A. & Kaczmareka, S. (2019a) Morphological ontogeny of *Trichoribates naltschicki* (Acari: Oribatida: Ceratozetidae). *Zootaxa*, 4717 (1), 47–64.
  - https://doi.org/10.11646/zootaxa.4717.1.6
- Seniczak, S., Seniczak, A., Kaczmareka, S. & Marquardta, T. (2019b) Morphological ontogeny, ecology and some biological parameters of Achipteria nitens (Acari: Oribatida: Achipteriidae). Zootaxa, 4717 (1), 30–46. https://doi.org/10.11646/zootaxa.4717.1.5
- Xu, Y., Zhang, F.-P. & Zhang, Z.-Q. (2018) Description of a new species of *Prolixus* (Acari: Trombidiformes: Tenuipalpidae) from *Austroderia splendens* (Poaceae) in New Zealand, with discussion of its ontogenetic patterns in chaetotaxy. *Zootaxa*, 4540 (1), 158–177. https://doi.org/10.11646/zootaxa.4540.1.11
- Xu, Y., Zhu, Y.-Z., Wu, J.-Q. & Zhang, F.-P. (2019) Morphological ontogeny in *Tenuipalpus orilloi* Rimando (Acari: Tenuipalpidae). *Zootaxa*, 4717 (1), 185–205. https://doi.org/10.11646/zootaxa.4717.1.9
- Yi, T.-C. & Ochoa, R. (2018) Revision of *Bryobiella* Tuttle & Baker (Acari, Tetranychidae), with ontogenetic development and redescription of *B. desertorum*. *Zootaxa*, 4540 (1), 93–131. https://doi.org/10.11646/zootaxa.4540.1.9
- Zhang, Z.-Q., Seeman, O., Fuangarworn, M. & Fan, Q.-H. (Eds) (2018) Ontogeny and morphological diversity in immature mites (Part I). *Zootaxa*, 4540 (1), 1–224. https://doi.org/10.11646/zootaxa.4540.1